

Design and Media Technology

Graduate School of Engineering, IWATE UNIVERSITY



Prospectus for Master's and Doctoral Programs

Introduction

The Graduate School of Engineering launched graduate programs in Design and Media Technology (D&MT) in 2009; these programs include both Master's and Doctoral programs. These programs are unique in Japanese universities where students can earn a degree in either Engineering or Design through our integrated courses of both Arts and Sciences that cover the fields of Design (Environmental Design and Artistic Design) as well as Media Technology.

We accept a wide variety of students with backgrounds in Design or Media Technology as well as international students and offer vibrant interdisciplinary research and education opportunities beyond the boundaries of laboratories. In particular, in our Master's program courses such as Introduction to Design & Media Technology, Project-Based Learning, Seminars in Design and Media Technology, and the Interactive Lounge, which serves as a graduation showcase, we offer educational opportunities that help students develop an understanding of the interdisciplinary nature of the research fields and teamwork skills.

We welcome students who are willing to acquire broad perspectives and skills in their fields and those who have the passion to apply their work to real-world settings where intensive collaboration is expected.

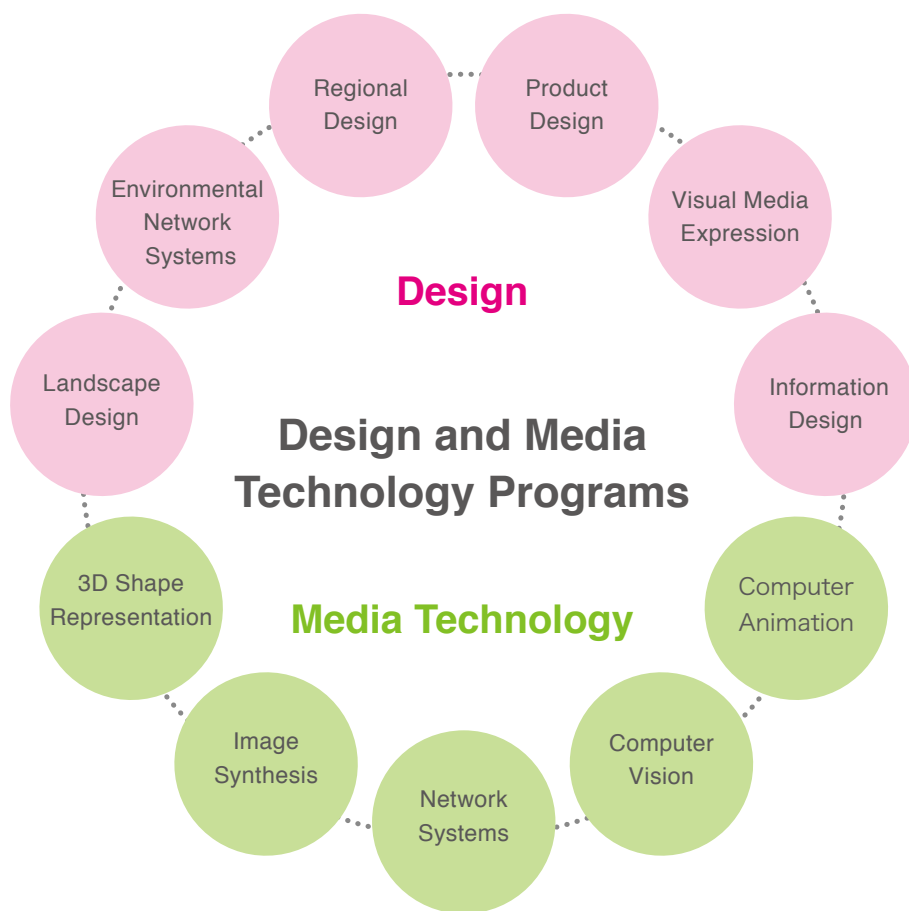
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General Education and Research Building(Enviroment Field)
The third floor is "Design & Media Technology Collaboration Studio".



Overview of Design and Media Technology



● Students can earn a degree in either Engineering or Design

Students can earn a degree in either Engineering or Design, according to the topic of their thesis.

>> For more details, please go to page 6 for the Master's degree and page 10 for the Doctoral degree.

● Education and research opportunities in the extensive fields of Design and Media Technology

We accept a wide variety of students with backgrounds in design or information/media. Our curriculum offers an extensive range of courses in both Design (Environmental Design and Artistic Design) and Media Technology.

>> For more details about the curriculum, please see pages 6–7 for the Master's program, page 10 for the Doctoral program, and pages 4–5 for the different research fields.

● Interdisciplinary education and research opportunities beyond the boundaries of research laboratories

Our education and research is interdisciplinary, going beyond the boundaries of research laboratories. Seminars and opportunities to present research results are offered at the department level.

>> For more details on our interdisciplinary education system, please go to page 7 for the Master's program and page 10 for the Doctoral program.

● Promoting international exchange

We actively promote international exchange by accepting international students and by collaborating with our affiliated universities for academic exchange programs.

>> For more details, please go to pages 12–13 for information on international student admissions and page 14 for information on affiliated universities for academic exchange programs.

Faculty and Areas of Research

Design

The field of Design deals with environmental, product, and content design. Education and research in this field include the studies of Environmental Network Systems, Regional Design, Landscape Design, Product Design, Information Design, and Visual Media Expression.

● Environmental Design

Education and research in Environmental Design focus on the database development of environmental information and environmental assessments to help build sustainable human environments and ecosystems. Other areas of education and research interest include regional planning and environmentally conscious community development.

Professor Naohiro Otsuka

Email address: otsuka@iwate-u.ac.jp

Research Areas: Environmental Assurance Engineering, Environmental Impact Assessment, Landscape Simulation

Subjects in charge of: Regional Design, Advanced Regional Design

Associate Professor Mitsugu Saitou

Email address: mitsugu@iwate-u.ac.jp

Research Areas: Atmospheric and Environmental Engineering, Environmental Impact Assessment, Environmental Information Engineering

Subjects in charge of: Environmental Network Systems, Advanced Environmental Network Systems

● Product Design

Education and research in Product Design focus on the process of designing human- and eco-friendly products. Other areas of education and research interests include Idea Generation Support, Art and Communication, and Design Assessment Methods.

Professor Takamitsu Tanaka

Email address: taktak@iwate-u.ac.jp

Research Areas: Product Design, Traditional Crafts and Design, Art Engineering

Subjects in charge of: Product Design, Advanced Product Design

● Content Design

Education and research in Content Design focus on Information Design and Visual Media Expression used in the creation of visual contents such as Media Art, Animation, and Website Content.

Professor Kenta Motomura

Email address: kenta@iwate-u.ac.jp

Research Areas: Basic Design and Art, Science of Art, Art Education

Subjects in charge of: Visual Media Expression, Advanced Visual Media Expression

Media Technology

The field of Media Technology deals with subjects related to Network, Interaction, and Content. Education and research in this field include the subjects of Network Systems, Image Synthesis, Computer Vision, 3D Shape Representation, and Computer Animation.

● Network Engineering

Education and research in Network Engineering focus on Network Systems, which is a fundamental technology in the construction of environmental sensing and cyber-communication.

Professor Yuji Koi

Email address: koui@cis.iwate-u.ac.jp

Research Areas: Network Engineering, Information Security Engineering

Subjects in charge of: Network Systems, Advanced Network Systems

Assistant Professor Naoshi Nakaya

Email address: nakaya@cis.iwate-u.ac.jp

Research Areas: Computer Networks, Information Security

● Interactive Engineering

Education and research in Interactive Engineering focus on real-time 3D visual sensing technologies and graphic technologies used for the construction of interactive systems in robotics and virtual reality.

Associate Professor Tadahiro Fujimoto

Email address: fujimoto@cis.iwate-u.ac.jp

Research Areas: Information Engineering, Computer Graphics

Subjects in charge of: Image Synthesis, Advanced Image Synthesis

Associate Professor Takuya Akashi

Email address: akashi@iwate-u.ac.jp

Research Areas: Media and Information Science, Computer Vision, Human Sensing

Subjects in charge of: Computer Vision, Advanced Computer Vision

Assistant Professor Katsutsugu Matsuyama

Email address: kmatsu@iwate-u.ac.jp

Research Areas: Visualization, Browsing System, Animation Technology

● Content Engineering

Education and research in Content Engineering focus on shape modeling and image generation technologies used in the creation of 3D visual contents such as CAD and CGs, and virtual-reality animation technologies.

Professor Norishige Chiba

Email address: nchiba@cis.iwate-u.ac.jp

Research Areas: Computer Animation, Interactive Graphics, Projection Mapping

Subjects in charge of: Computer Animation, Advanced Computer Animation

Professor Kouichi Konno

Email address: konno@cis.iwate-u.ac.jp

Research Areas: Media Informatics, Archaeological Information, Computer Graphics

Subjects in charge of: 3Dimensional Shape Representation, Advanced 3Dimensional Shape Representation

Overview of Master's Program

● Knowledge and Abilities to be Acquired as well as Cultivation of Human Resources

In view of the need for a people-friendly environment and the social need for a cultural living space, the aim of the Design and Media Technology program is to develop highly skilled professionals who have an understanding of their reciprocal fields and who are able to participate in creative efforts through collaboration. These qualities are actualized as they gain broad, specialized knowledge, techniques, and cooperative abilities through [Design](#) courses that facilitate environmental-, product-, and content designs; [Media Technology](#), which serves as the generic technology of Design Technology; and a combination of these two disciplines.

● Attainable Degrees

Upon completion of the Master's program, students may earn a Master's degree in either [Engineering](#) or [Design](#) according to the topic of their thesis.

● Characteristics of the Curriculum

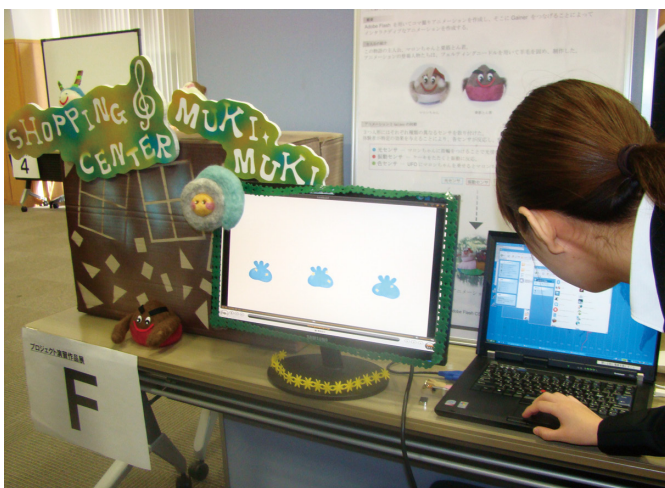
Our required courses include [Introduction to Design and Media Technology](#) as a gateway to integrated education in Design and Media Technology, which supports Design, and [Project-Based Learning](#), which is designed for students to develop teamwork skills.

Project-Based Learning

Project-Based Learning is offered as one of our core courses and is designed to help students develop teamwork skills in their collaborative work. In this problem-based learning style course, students are required to work on projects related to environmental, product, or content design.

Introduction to Design and Media Technology

Introduction to Design and Media Technology is offered as one of the core courses for students who wish to study Design or Media Technology. This course is designed to help students develop interactive communication skills and broad academic knowledge in reciprocal fields that will lead to further studies in optional courses.



Presentation of Project Based Learning activities at student research and creative works showcase "Interactive Lounge 2011 by D&MT"

● Curriculum

Core Courses

Introduction to Design and Media Technology and Project-Based Learning

Optional Courses

Courses in Design

Regional Design
Environmental Network Systems
Landscape Design
Product Design
Visual Media Expression
Information Design

Courses in Media Technology

Network Systems
Image Synthesis
Computer Vision
Computer Animation
3D Shape Representation

Courses for both Master's and Doctoral Programs

Advanced Engineering Ethics
Venture Business
International Business
Advanced Management of Technologies
Regional Development
Advanced Soft Path Engineering
Advanced English for Science and Technologies I
Advanced English for Science and Technologies II

Special Seminar

Students are encouraged to voluntarily engage in training activities such as attending talks, special lectures, and academic conferences and participating in seminars in their specialized or related fields; in English training by participating in international conferences or international exchange programs; and in voluntary training by participating in social activities. Students are expected to report their experience in their portfolio.

Special Study

Students will receive advice from their advisory professors on how to carry out the research for their Master's thesis, how to construct papers, and what methods of presentation to use. More advice is available from the faculty at interim presentations, preliminary defense, or Interactive Lounge (a graduation showcase).

● Interdisciplinary education beyond the boundaries of research laboratories

Design and Media Technology programs offer education through Introduction to Design and Media Technology, Project-Based Learning, and Interactive Lounge, which is a graduation showcase where students deliver a visual presentation of their master's thesis, as well as through Design and Media Technology Seminars conducted by internal and external faculty and doctoral students.

Presentation on Master's Thesis at student research and creative works showcase "Interactive Lounge 2011 by D&MT"



Overview of the Master's Program

● Admission Examination

The details are as follows:

Please refer to the Guide for Admission to the Graduate School of Engineering (Master's program), which will be published on the university's website.

Enrollment limit 10 students

Schedule of Admission Examination

The admission examination takes place biannually. For those who wish to graduate in March, the second admission examination is recommended because of the scope of the examination.

First admission examination

The first admission examination takes place sometime between late August and early September each year. Students may enroll in October of the same academic year or in April of the next academic year.

Second admission examination

The second admission examination takes place sometime between late January and early February. Students may enroll only in April of the next academic year.

Overview of the Admission Examination

The admission examination is based on an English language test and a presentation examination irrespective of the background of the applicants, i.e., whether they are newly graduating, working professionals, or international students, and irrespective of the fields of their academic interests.

English

The department does not conduct its own English language test. The applicant's English level is evaluated on the basis of his/her TOEIC or TOEFL score. The applicant must provide the original and a photocopy of the original score report of one of the following: the Official Score Certificate of TOEIC; the Score Report of TOEIC-IP; the Examinee's Score Record of either TOEFL-PBT, TOEFL-CBT, or TOEFL-iBT; or the Score Card of TOEFL-ITP.

Presentation Examination

At the presentation examination, the applicants will deliver a presentation on the research that they have conducted for their undergraduate thesis or on the research that they have accomplished through their professional career (approximately 15 minutes; in either Japanese or English), and will take an oral examination in the relevant subjects. The overall examination is 30 minutes long for each examinee. The presentation should include the purpose and background of the research, the outcomes of the research, and the future challenges, as well as his/her research plans for the future after admission. Applicants are evaluated on the basis of their level of understanding of their research theme, the level of accomplishment, and the future research plans through a Question and Answer Session on the applicants' presentation, where the applicant's overall qualities are evaluated, such as willingness to study, inquisitiveness, creativity, and project execution skills. An applicant who has not started his/her research for an undergraduate thesis because of early admission or early graduation is expected to deliver a presentation on a future research plan (including the purpose and background).

● Financial Support and Study Options

Financial support may be available. For example, scholarships are offered by the Japan Student Services Organization (JASSO), and exemption of entrance fees and/or tuition fees and TA opportunities may be offered by the university. Students may also be able to apply for research fellowship positions that assist research projects. For working students, a long-term study program is also available, which allows them to extend their periods of study up to 4 years with the 2-year tuition fees to earn a degree.

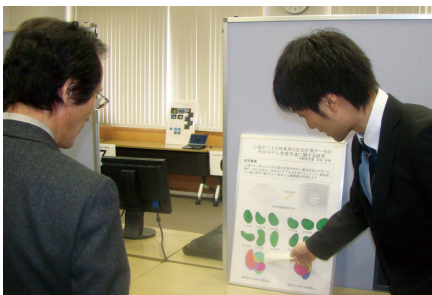
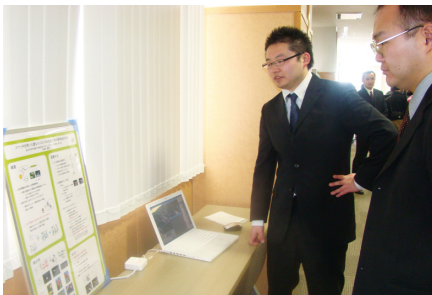
● Opening to the Public

Students' research results in D&MT are opened to the public mainly through Open Campus, Interactive Lounge by D&MT and Art&Technology Tohoku organized by The Society for Art and Science - Tohoku Section.

Open Campus



Interactive Lounge



Art&Technology Tohoku



For more details, please go to the web site below:

Iwate University

<http://www.iwate-u.ac.jp/>

Department of Design and Media Technology

<http://www.dmt.iwate-u.ac.jp/>

Outline of Doctoral Program

● Knowledge and Abilities to be Acquired as well as Cultivation of Human Resources

In the era of increased desire for human-friendly and cultured living environments, the Doctoral program in Design and Media Technology offers courses on [Design](#) (environmental, product, and content design), [Media Technology](#), which serves as the fundamental technology for Design, and courses that integrate both. Our programs are designed to help develop highly specialized knowledge and problem-solving skills, with the aim to foster outstanding experts and educators/researchers who can succeed in the field of Design and Media Technology, particularly with their knowledge in research and development.

● Attainable Degrees

Upon completion of the doctoral program, students may earn a PhD in either [Engineering](#) or [Design](#), according to the topic of their dissertations.

● Curriculum

Courses in Design

Advanced Regional Design
Advanced Environmental Network Systems
Advanced Product Design
Advanced Visual Media Expression
Advanced Information Design

Courses in Media Technology

Advanced Network Systems
Advanced Image Synthesis
Advanced Computer Vision
Advanced Computer Animation
Advanced 3D Shape Representation

Courses for Both Master's and Doctoral Programs

Advanced Engineering Ethics
Venture Business
International Business
Advanced Management of Technology
Regional Development
Advanced Soft Path Engineering
Advanced English for Science and Technologies I
Advanced English for Science and Technologies II

● Interdisciplinary Education beyond the Boundaries of Research Laboratories

Each faculty member in charge of a course creates a syllabus suitable for students' backgrounds in collaboration with their advisory Professors. In our interdisciplinary teaching system, students will have opportunities to deliver their presentation at Design and Media Technology Seminars, where their final achievement is evaluated.

● Admission Examinations

Please refer to the Guidelines for Admission to the Graduate School of Engineering (Doctoral program), which will be published on the university's website.

Enrollment limit

3 students

Schedule of Admission Examination

The admission examination takes place biannually. For those who are graduating in March, the second examination is recommended because of the scope of the examination.

First admission examination

The first examination takes place sometime between late August and early September each year. Students may enroll in October of the same academic year or in April of the next academic year.

Second admission examination

The second examination takes place sometime between late January and early February. The students can enroll only in April of the next academic year.

Overview of the Admission Examination

The admission examination is based on an English language test and a presentation examination irrespective of the background of the applicants, i.e., whether they are newly graduating, working professionals, or international students, and irrespective of the fields of their academic interests.

English

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Presentation Examination

At the presentation examination, applicants will deliver a presentation on the research that they have conducted for their Master's thesis or on the research that they have accomplished through their professional career (approximately 15 minutes; in either Japanese or English), and will take an oral exam on relevant subjects. The overall examination is 30 minutes long for each student. The presentation should include the purpose and background of the research, the outcomes of the research, and future challenges, as well as his/her future research plans after admission. Applicants are evaluated on the basis of their level of understanding of their research theme, the level of accomplishment, and future research plans through a Question and Answer Session on the applicants' presentation, where the applicant's overall qualities are evaluated, such as willingness to study, inquisitiveness, creativity, and project execution skills.

● Financial Support and Study Options

Financial support may be available. For example, scholarships are offered by the Japan Student Services Organization (JASSO), and a exemption of entrance fees and/or tuition fees and RA opportunities may be offered by the university. Students may also be able to apply for research fellowship positions that assist research projects. For working students, a long-term study program is also available, which allows them to extend their periods of study up to 5 years with the 3-year tuition fees to earn a degree, or they can apply for research project collaborators positions.

Further, an early degree completion option may be offered to students with a professional background who have demonstrated a record of outstanding accomplishment or to those who have completed their study sooner.

International Student Admissions

The admission procedures for international students are described below:

1 Contact a potential advisory professor

We advise you to contact a faculty member under whom you wish to study, by say, email. To determine whether you will be admitted or not, the following documents are required: [your resume](#) (with your photograph), [certificate of graduation degree](#), [academic transcript](#) (i.e., academic transcript of your undergraduate studies if you are an applicant for the Master's program or an academic transcript of your Master's program if you are an applicant of the doctoral program), [research plan you would like to pursue](#), and if possible, recommendation letter(s) from your former professor(s) of the college/university from where you graduated .

(Additional note) As a general rule, an international student is admitted first as a Research Student (as a Non-Regular student). Therefore, even if an international student is admitted as a Research Student, he or she still has to pass the graduate school's admission examination in order to be admitted as a graduate student.

2 Application procedures for Research Students

For more details on the application procedures, please visit our university's International Center website (<http://iuc.iwate-u.ac.jp/>).

The timeline of application is as follows:

For those who reside
outside Japan

Application in [late May](#) for the
[October](#) enrollment
Application in [late October](#) for
the [April](#) enrollment

For in Japan
residents

Application in [late August](#) for
the [October](#) enrollment
Application in late [February](#) for
the [April](#) enrollment

3 Admission as a Research Student

A research student is expected to take Japanese language courses held at our university's International Center and to pursue his/her research study during this period (6 months or 1 year) as a Research Student.

4 Admission examination

Admission as a Research Student does not guarantee admission to the graduate school. Therefore, a student who has failed the admission examination will need to change his or her academic plan. [Our research laboratories do not usually allow Research Students to stay more than one year.](#)

● Special admission procedures for international students for our doctoral program

We have special admission procedures for those who meet our requirements. An international applicant may be admitted without having to come to Japan, if he or she is recommended by an affiliated university or has established a relationship with one of our faculty members in his/her field of interest on the grounds that the applicant is deemed to meet the academic requirements for admission to our doctoral program.

● Financial support for international students

Financial support may be available. For example, scholarships are offered by the Japan Student Services Organization (JASSO) and other scholarships are offered by other organizations that support international students, although it may not be easy for a student to receive a scholarship in case of a large number of applicants. However, all the options offered by the university as described earlier in the section of Financial Support and Study Options also apply to international students. In fact, many of the international students in our doctoral program receive a exemption of one half of the tuition fees and work as RAs. Often, their tuition fees are paid more or less fully by these means. In addition, many international doctoral students have received research fellowships as well.

● Information for International Students

Iwate University International Center

<http://iuic.iwate-u.ac.jp/english/index.html>

Iwate University International Center
(Information for Prospective Students)

http://iuic.iwate-u.ac.jp/english/08_data/index.html

More information is available for international students, such as Outline of Iwate University, Guidebook for International Students, and the Iwate University Short-term International Program.

- JASSO-Japan Student Services
Organization
(Information on Study in Japan)

http://www.jasso.go.jp/study_j/index_e.html

International Academic Exchange Partners



1 Faculty of Science, Chulalongkorn University (Thailand)

2 Northwest A&F University (China)

3 Xian University of Science & Technology (China)

4 School of Mathematics and Computer Science, National University of Mongolia (Mongol)

5 The Mongolian University of Science & Technology (Mongol)

6 National Kaohsiung Normal University (Taiwan)

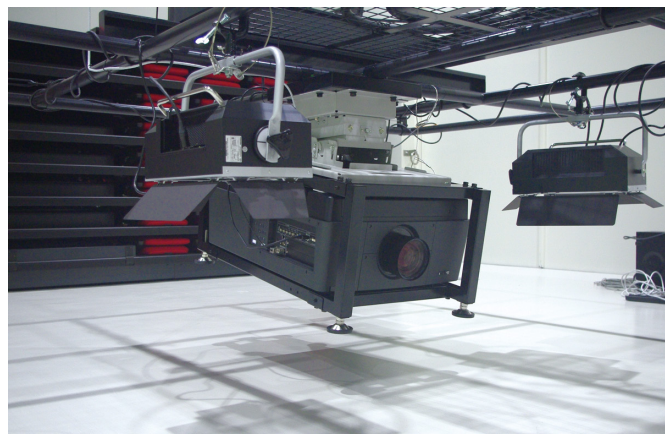
Overview of Design & Media Technology Collaboration Studio

This studio facilitates education and research activities in D&MT, and general public events such as Open Campus, Interactive Lounge and Art&Technology Tohoku.



Large-scale Green Screen Studio: this makes it possible to capture the view from any direction.

A high intensity 15000 Lumen Projector hung from an elevating grid and Rollback Red Chair Stand: these bring a theater space.



Projection to the cloths hung from an elevating baton

Graduate School of Engineering
I W A T E U N I V E R S I T Y



Design & Media Technology

D&MT

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